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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,900	11/03/2003	Carl Michael Hesler	A01448	4372

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EXAMINER	
SHOSHO, CALLIE E	
ART UNIT	**PAPER NUMBER**
1714	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,900	HESLER ET AL.	
	Examiner	Art Unit	
	Callie E. Shosho	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/14/04 & 4/21/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, and 5-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyabayashi et al. (U.S. 2002/0107303).

Miyabayashi et al. disclose aqueous ink jet ink for printing a hydrophobic surface wherein the ink comprises aqueous emulsion polymer having glass transition temperature of 30 ^{0}C or below, pigment, and water-soluble surfactant, i.e. anionic surfactant. The hydrophobic surface comprises polyvinyl chloride. There is also disclosed method for providing an image on a hydrophobic surface comprising forming the above ink, jetting the ink onto the hydrophobic surface, and then allowing the ink to dry (paragraphs 2, 35, 45, 47, 77, 109, 206, and claims 26-28).

In light of the above, it is clear that Miyabayashi et al. anticipate the present claims.

3. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. (U.S. 6,773,102).

Chen et al. disclose aqueous ink jet ink for printing a hydrophobic surface wherein the ink comprises aqueous emulsion polymer having glass transition temperature of -50 to 150 ^{0}C pigment, and water-soluble surfactant, i.e. anionic or cationic surfactant. There is also disclosed method for providing an image on a hydrophobic surface comprising forming the above ink, jetting the ink onto the hydrophobic surface, and then allowing the ink to dry (col.2, lines 20-36 and 40-49, col.4, lines 34-36, col.5, lines 52-56, col.9, lines 59-61, and col.10, lines 53-54).

In light of the above, it is clear that Chen et al. anticipate the present claims.

4. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Brown et al. (U.S. 2004/012213).

Brown et al. disclose aqueous ink jet ink for printing a hydrophobic surface wherein the ink comprises aqueous emulsion polymer having glass transition temperature of –60 to 120 ^{0}C, pigment, and water-soluble surfactant, i.e. anionic surfactant. The hydrophobic surface comprises polyvinyl chloride (paragraphs 1, 6, 13, 24, 36, 44, 51, and 63). Although there is no explicit disclosure of method as presently claimed, given that Brown et al. disclose that the ink is suitable for application by ink jet printing, it is clear that such application would inherently including forming the above ink, jetting the ink onto the hydrophobic surface, and then allowing the ink to dry.

In light of the above, it is clear that Brown et al. anticipate the present claims.

5. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Patel et al. (U.S. 5,977,210) taken in view of the evidence given in Sasaki et al. (U.S. 4,248,636) and Satake et al. (U.S. 5,814,685).

Patel et al. disclose aqueous ink jet ink for printing a plastic surface wherein the ink comprises aqueous emulsion polymer, pigment, and water-soluble surfactant, i.e. anionic or cationic surfactant. It is well known, as evidenced by Sasaki et al. (col.1, lines 54-55), that plastic surface are hydrophobic. There is also disclosed method for providing an image on a hydrophobic surface comprising forming the above ink, jetting the ink onto the hydrophobic surface, and then allowing the ink to dry (col.1, lines 5-7, col.3, lines 42-50, col.4, lines 14-23 and 51-53, col.5, lines 22-25, col.6, lines 11-41 and 58-59, col.7, lines 36-43 and 55, and col.11, lines 32-36). Although there is no explicit disclosure of the glass transition temperature, it calculated, using the preferred polymer of Patel et al., i.e. obtained from 82% styrene, 18% butyl acrylate, and 2% acrylic acid, and the well known glass transition temperatures of styrene, i.e. 100 ^{0}C, butyl acrylate, i.e. –53 ^{0}C, and acrylic acid, i.e. 106 ^{0}C as evidenced by Satake et al. (col.4, lines 39 and 49 and col.5, line 50), that the polymer possesses glass transition temperature of, for instance, approximately 53 ^{0}C.

In light of the above, it is clear that Patel et al. anticipate the present claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (U.S. 6,773,102) or Patel et al. (U.S. 5,979,210) either of which in view of Miyabayashi et al. (U.S. 2002/0107303).

The disclosures with respect to Chen et al. and Patel et al. in paragraphs 3 and 5 above are incorporated here by reference.

The difference between Chen et al. or Patel et al. and the present claimed invention is the requirement in the claims of specific type of substrate.

Chen et al. and Patel et al. each disclose the use of hydrophobic substrate including plastics, however, there is no explicit disclosure in either reference that the substrate is polyvinyl chloride.

Miyabayashi et al., which is drawn to ink jet ink, disclose using the ink on plastic substrate such as polyvinyl chloride (paragraph 109). It would have been within the skill level of one of ordinary skill in the art to choose type of substrate utilized depending on the end use of the ink.

In light of the disclosure of Miyabayashi et al., it therefore would have been obvious to one of ordinary skill in the art to use ink of Chen et al. or Patel et al. on plastic substrate, including polyvinyl chloride substrate as presently claimed, in order to produce ink for desired end use, and thereby arrive at the claimed invention.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Carlson et al. (U.S. 6,590,025) disclose ink jet ink comprising latex and pigment wherein the ink is utilized on substrate including polyvinyl chloride, however, there is no disclosure of the glass transition temperature of the polymer.

Chen et al. (U.S. 6,848,777), similar to Chen et al. (U.S. 6,773,102), disclose aqueous ink for hydrophobic substrate wherein the ink comprises latex possessing glass transition temperature of –50 to 150 ^{0}C, pigment, and surfactant.

Held (U.S. 5,852,075) disclose ink comprising aqueous carrier medium, pigment, and emulsion polymer, however, there is no disclosure that the ink comprises water-soluble surfactant and no explicit disclosure of the glass transition temperature of the polymer.

EP 882771 discloses ink comprising aqueous vehicle, pigment, and resin emulsion, however, there is no disclosure that the ink is suitable for printing on hydrophobic surface and no disclosure of the glass transition temperature of the polymer.

Idogawa et al. (U.S. 5,942,560) and Idogawa et al. (U.S. 5,965,634) each disclose ink comprising colored particles containing dye and polymer, however, the ink requires dye not pigment as presently claimed. Further, there is no disclosure that the ink is suitable for printing on hydrophobic surface and no disclosure of the glass transition temperature of the polymer.

Stubbe et al. (U.S. 6,224,660) disclose ink comprising pigment and silane emulsion, however, there is no disclosure that the ink is suitable for printing on hydrophobic surface and no disclosure of the glass transition temperature of the polymer.

Cheng et al. (U.S. 6,239,193) disclose ink comprising pigment and latex possessing glass transition temperature of 25 to 80 ^{0}C, however, there is no disclosure that the ink comprises water-soluble surfactant and no disclosure that the ink is suitable for printing on hydrophobic surface.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
11/21/05